

Appl. No. 10/725,595
Response dated: August 9, 2006
Reply to Office action of May 9, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (Cancelled)
2. (Previously Presented) The liquid crystal display apparatus of claim 5, wherein the retardation layer comprises a liquid crystal polymer.
3. (Original) The liquid crystal display apparatus of claim 2, wherein the liquid crystal polymer corresponds to cholesteric liquid crystal.
4. (Previously Presented) The liquid crystal display apparatus of claim 5, wherein the retardation layer includes reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC), or cycloolefin (COP).
5. (Currently Amended) A liquid crystal display apparatus comprising:
 - a first transparent substrate;
 - a second transparent substrate facing the first substrate;
 - a liquid crystal layer interposed between the first and second transparent substrates;
 - a retardation layer having a function of a biaxial film interposed between the first and second transparent substrates and compensating phase difference of light that passes through the liquid crystal layer; and
 - a color filter layer disposed on the second transparent substrate,
wherein the retardation layer is disposed directly on the color filter layer.
6. (Currently Amended) A liquid crystal display apparatus comprising:

21C-0334
LW9050US/CS

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a first transparent substrate;
a second transparent substrate facing the first substrate;
a liquid crystal layer interposed between the first and second transparent substrates;
a retardation layer having a function of a biaxial film interposed between the first and second transparent substrates and compensating phase difference of light that passes through the liquid crystal layer;
a color filter layer disposed on the second transparent substrate; and
a protection layer disposed directly on the color filter layer,
wherein the retardation layer is disposed directly on the protection layer.

7. (Cancelled)

8. (Withdrawn) The liquid crystal display apparatus of claim 1, further comprising:

a pixel electrode formed on the first transparent substrate; and
an alignment film formed on the pixel electrode,
wherein the retardation layer is interposed between the pixel electrode and the alignment film.

9. (Withdrawn) A method of manufacturing a color filter substrate, comprising: forming a color filter layer on a transparent substrate; coating a liquid crystal material on the color filter layer; irradiating an ultraviolet light onto the liquid crystal material to form a retardation layer with a fixed alignment of liquid crystal molecules of the liquid crystal material, the retardation layer; forming a common electrode layer on the retardation layer; and forming an alignment film on the common electrode layer.

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10. (Withdrawn) The method of claim 9, wherein the liquid crystal material is coated via a micro gravure coating method or a capillary coating method.

11. (Withdrawn) The method of claim 9, wherein the retardation layer comprises reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC) or cycloolefin polymer (COP).

12. (Withdrawn) The method of claim 9, wherein the liquid crystal material corresponds to a cholestric liquid crystal.

13. (Withdrawn) The method of claim 9, wherein a polarized ultraviolet light is irradiated to form the retardation layer having a function of a biaxial film.

14. (Withdrawn) The method of claim 9, wherein a non-polarized ultraviolet light is irradiated onto the retardation layer to form the retardation layer having a function of a C-plate film.

15. (Withdrawn) A method of manufacturing a color filter substrate, comprising: forming a color filter layer on a transparent substrate; forming a protection layer on the color filter layer; coating a liquid crystal material on the protection layer; irradiating an ultraviolet light onto the liquid crystal material to form a retardation layer with a fixed alignment of liquid crystal molecules of the liquid crystal molecules of the liquid crystal material, the retardation layer; forming a common electrode layer on the retardation layer; and forming an alignment film on the common electrode layer.

16. (Withdrawn) The method of claim 15, wherein the liquid crystal material is coated via a micro gravure coating method or a capillary coating method.

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17. (Withdrawn) The method of claim 15, wherein the retardation layer comprised reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC) or cycloolefin polymer (COP).

18. (Withdrawn) The method of claim 15, wherein the liquid crystal material corresponds to a cholestric liquid crystal.

19. (Withdrawn) The method of claim 15, wherein the ultraviolet light is polarized to form the retardation layer having a function of a biaxial film.

20. (Withdrawn) The method of claim 15, wherein the ultraviolet light corresponds to a non-polarized ultraviolet light to form the retardation layer having a function of a C-plate film.

21. (Withdrawn) A method of manufacturing a color filter substrate, comprising: forming a color filter layer on a transparent substrate; forming a protection layer on the color filter layer; forming a common electrode layer on the protection layer; coating a liquid crystal material on the common electrode layer; irradiating a ultraviolet light onto the liquid crystal material to form a retardation layer with a fixed alignment of liquid crystal molecules of the liquid crystal material, the retardation layer; and forming alignment film on the retardation layer.

22. (Withdrawn) The method of claim 21, wherein the liquid crystal material is coated via a micro gravure coating method or a capillary coating method.

23. (Withdrawn) The method of claim 21, wherein the retardation layer comprises reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC) or cycloolefin polymer (COP).

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24. (Withdrawn) The method of claim 21, wherein the liquid crystal material corresponds to a cholesteric liquid crystal.

25. (Withdrawn) The method of claim 21, wherein the ultraviolet light is polarized to form the retardation layer having a function of a biaxial film.

26. (Withdrawn) The method of claim 21, wherein the ultraviolet light corresponds to a non-polarized ultraviolet light to form the retardation layer having a function of a C-plate film.

27. (Withdrawn) A method of manufacturing an array substrate, comprising: forming a pixel electrode on a region of a substrate, such that the pixel electrode is electrically connected to a switching device, the region being defined by a gate line and a data line; coating a liquid crystal material on the pixel electrode layer; irradiating an ultraviolet light onto liquid crystal material to form a retardation layer with a fixed alignment of liquid crystal molecules of the liquid crystal material, the retardation layer; and forming an alignment film on the retardation layer.

28. (Withdrawn) The method of claim 27, wherein the liquid crystal material is coated via a micro gravure coating method or a capillary coating method.

29. (Withdrawn) The method of claim 27, wherein the retardation layer comprises reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC) or cycloolefin polymer (COP).

30. (Withdrawn) The method of claim 27, wherein the liquid crystal material corresponds to a cholesteric liquid crystal.

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31. (Withdrawn) The method of claim 27, wherein the ultraviolet light is polarized to form the retardation layer having a function of a biaxial film.

32. (Withdrawn) The method of claim 27, wherein the ultraviolet light corresponds to a non-polarized ultraviolet light to form the retardation layer having a function of a C-plate film.

33. (New) The liquid crystal display apparatus of claim 6, wherein the retardation layer comprises a liquid crystal polymer.

34. (New) The liquid crystal display apparatus of claim 33, wherein the liquid crystal polymer corresponds to cholesteric liquid crystal.

35. (New) The liquid crystal display apparatus of claim 6, wherein the retardation layer includes reactive mesogen mixture (RMM), polyvinylalcohol (PVA), polycarbonate (PC), or cycloolefin polymer (COP).